

## **Appendix F**

### **STORET Characteristic Names and Required Valid Values for MTWTRSHD Org ID**

The information contained in this appendix applies strictly to the STORET Organization ID “MTWTRSHD.” Organization IDs MDEQ-WQ, MBMG, MTVOLWQM, and TSWQC require different Field/Lab Source and Procedure IDs for some parameters.

This appendix provides required values for specific STORET data entry fields in accordance with DEQ approved Sampling and Analysis Plans (SAP) and their associated Analyte Checklists. This appendix does not provide valid values for all STORET data entry fields. For complete directions on the STORET upload process, data entry templates, and all valid values, see the DEQ Water Quality Planning Bureau’s Data Management web pages at: <http://www.deq.mt.gov/wqinfo/datamgmt/index.asp>.

#### **NOTE:**

**The values provided in this appendix are consistent with the parameters and analytical methods provided in the Analyte Checklist of the respective DEQ approved SAP. If differing analytical methods are used, data from laboratory analysis reports may require different STORET field values. It is the responsibility of the Contractor to upload correct, QAed laboratory data to STORET. Data uploaded to STORET must be consistent with the laboratory analytical reports.**

Note: If any sample is field filtered, the sample fraction will always be “Dissolved.”

Parameter	STORET Characteristic Name	Sample Fraction	Value Type	Field/Lab Source ID	Field/Lab Procedure ID
<b>Water Sample – Common Ions and Physical Parameters</b>					
Total Suspended Solids (TSS)	Solids, Total Suspended (TSS)	N/A	Actual	Determine valid values from Guidance Appendix A	Determine valid values from Guidance Appendix A
Total Dissolved Solids (TDS)	Solids, Dissolved	N/A	Actual		
Total Alkalinity	Alkalinity, Total (total hydroxide+carbonate+bicarbonate)	N/A			
Sulfate	Sulfur, sulfate (SO4) as S	Total	Actual		
Chloride	Chloride	Total	Actual		
Dissolved Organic Carbon (DOC)	Carbon, organic	Dissolved	Actual		
Total Organic Carbon (TOC)	Carbon, Total Organic (Toc)	Total	Actual		
Sulfide	Sulfide	N/A	Actual		
<b>Water Sample – Calculated Results</b>					
Hardness as CaCO <sub>3</sub>	Hardness, Ca + Mg	N/A	Calculated	APHA	2340
Sodium Absorption Ratio (SAR)	Sodium Adsorption Ratio [(Na)/(sq root of ½ Ca + Mg)]	N/A	Calculated	MTWTRSHD	SAR-CALC
<b>Water Sample - Nutrients</b>					
Total Persulfate Nitrogen (TPN)	Nitrogen, mixed forms (NH <sub>3</sub> )+(NH <sub>4</sub> )+organic+(NO <sub>2</sub> )+(NO <sub>3</sub> )	Total	Actual	MTWTRSHD	TPN-4500-N_C
Dissolved Orthophosphate as P	Phosphorus, orthophosphate as P	Dissolved		Determine valid values from Guidance Appendix A	Determine valid values from Guidance Appendix A
Total Phosphorus as P	Phosphorus as P	Total			
Nitrate-Nitrite as N	Nitrogen, Nitrite (NO <sub>2</sub> ) + Nitrate (NO <sub>3</sub> ) as N	Total			
Total Ammonia as N	Nitrogen, ammonia as N	Total			

Parameter	STORET Characteristic Name	Sample Fraction	Value Type	Field/Lab Source ID	Field/Lab Procedure ID
<b>Water Sample – Dissolved Metals (0.45 um filtered)</b>					
Aluminum	Aluminum	Dissolved	Actual	Determine valid values from Guidance Appendix A	Determine valid values from Guidance Appendix A
Cadmium	Cadmium				
Chromium	Chromium				
Copper	Copper				
Iron	Iron				
Lead	Lead				
Silver	Silver				
Zinc	Zinc				
Antimony	Antimony				
Barium	Barium				
Beryllium	Beryllium				
Boron	Boron				
Manganese	Manganese				
Nickel	Nickel				
Thallium	Thallium				
Uranium, Natural	Uranium				
Chromium VI	Chromium, hexavalent				
<b>Water Sample – Total Recoverable Metals</b>					
Arsenic	Arsenic	Total Recoverble	Actual	Determine valid values from Guidance Appendix A	Determine valid values from Guidance Appendix A
Cadmium	Cadmium				
Calcium	Calcium				
Chromium	Chromium				
Copper	Copper				
Iron	Iron				
Lead	Lead				
Magnesium	Magnesium				
Potassium	Potassium				
Selenium	Selenium				

Parameter	STORET Characteristic Name	Sample Fraction	Value Type	Field/Lab Source ID	Field/Lab Procedure ID
<b>Water Sample – Total Recoverable Metals (Continued)</b>					
Silver	Silver	Total Recoverble	Actual	Determine valid values from Guidance Appendix A	Determine valid values from Guidance Appendix A
Sodium	Sodium				
Zinc	Zinc				
Antimony	Antimony				
Barium	Barium				
Beryllium	Beryllium				
Boron	Boron				
Manganese	Manganese				
Nickel	Nickel				
Thallium	Thallium				
Uranium, Natural	Uranium				
<b>Water Sample – Total Metals</b>					
Mercury	Mercury	Total	Actual	Determine valid values from Guidance Appendix A	Determine valid values from Guidance Appendix A
Mercury, ultra low-level	Mercury				
<b>Sediment Sample – Total Recoverable Metals</b>					
Arsenic	Arsenic	Total Recoverble	Actual	Determine valid values from Guidance Appendix A	Determine valid values from Guidance Appendix A
Cadmium	Cadmium				
Chromium	Chromium				
Copper	Copper				
Iron	Iron				
Lead	Lead				
Zinc	Zinc				
Mercury	Mercury				

**Chlorophyll-a Samples**

Parameter	STORET Characteristic Name	Sample Fraction	Value Type	Field/Lab Source ID	Field/Lab Procedure ID	Weight Basis
Chlorophyll-a (in water)	See Tables Below	See Tables Below	See Tables Below	See Tables Below	See Tables Below	N/A
Ash Free Dry Weight (water)	Weight	Total	Actual	APHA	10300-C	Ash-free dry
Ash Free Dry Weight (substrate)	Weight	Total	Actual	APHA	10300-C	Ash-free dry

**Composite Samples - Weighted Average of More Than One Collection Technique**

Characteristic Name	Activity Comments	Medium	Sample Collection Procedure ID	Value Type	Field/Lab Source ID	Field/ Lab Procedure ID	Result Comments
Chlorophyll a, corrected for pheophytin	Enter the # of transects & the # of samples of each composited sample technique	Other	CHLPHL-CMP	Calculated	MTWTRSHD	CHLPHL-CALC	Weighted Average

Detection Limit	Analysis Date	Laboratory ID
Leave this blank	Enter the date the last composite sample for the site was analyzed	Enter the lab where the samples were analyzed

You are only entering your calculated value of the weighted average for the entire site. Do not enter the laboratory result values of each individual composite sample.

If a laboratory composites two different sampling techniques into one sample, the data should be rejected and not uploaded to STORET.

**Examples of Activity Comments**

1 transect: 9 templates, 2 cores (Example for large river method)

11 transects: 10 templates, 1 core (Example for the 11 transect method)

9 transects: 5 templates, 3 hoops, 1 core (Example for the 11 transect method.)

Make sure your numbers match your field sheets and lab reports.

**Composite Samples - One Collection Technique, and Individual Samples (Not Compositing)**

Characteristic Name	Medium	Sample Collection Procedure ID	Value Type	Field/Lab Source ID	Field/Lab Procedure ID
Chlorophyll a, corrected for pheophytin	See Valid Values table below	See Valid Values table below	Actual	APHA	10200-H

**Valid Values for Single Method Composite Samples and Individual Samples**

	Valid Medium Value	Valid Sample Collection Procedure ID Value
<b>Individual Sample Techniques</b>		
Template	Other	CHLPHL-1
Hoop	Other	HOOP
Core	Sediment	SED-CORE
Multiple Small Rocks Within Template	Other	CHLPHL-2
<b>Composite Sample Techniques</b>		
Template Composite	Other	CHLPHL-1-C
Hoop Composite	Other	HOOP-C
Core Composite	Sediment	SED-CORE-C
Multiple Small Rocks Composite	Other	CHLPHL-2-C

**Visually Estimated**

Characteristic Name	Medium	Activity Comment	Activity Type	Activity Category	Sample Collection Procedure ID	Value Type	Result Value	Detection Limit Units	Quantification High	Field/Lab Source ID	Field/Lab Procedure ID
Chlorophyll a, uncorrected for pheophytin	Water	Visual estimation; Photos taken	Field Msr/Obs	Routine Msr/Obs	N/A	Estimated	*Present<QL	mg/m <sup>2</sup>	50	MTWTRSHD	CHLPHL-VISUAL

**Field Parameters**

<b>Field Measurement</b>	<b>STORET Characteristic Name</b>	<b>Value Type</b>	<b>Result Valid Values</b>	<b>Field/Lab Source ID</b>	<b>Field/Lab Procedure ID Valid Values</b>
Temperature	Temperature, water	Actual	<value>		
pH	pH	Actual	<value>		
SC	Specific Conductance	Actual	<value>		
DO	Dissolved oxygen (DO)	Actual	<value>		
Turbidity	RBP Turbidity Code	Estimated	Clear Slight Turb. Turbid Opaque		
Flow	Flow	Actual “Estimated” if procedure is FLOW- ESTIMATED	<value>	MTWTRSHD	FLOW-METER FLOW-STAFF GAGE FLOW-ESTIMATED FLOW-FLOAT

“FLOW-FLOAT” requires “Estimated” Value Type. If this method is used, enter “Float Method” in the Activity Comments field. (Do not forget to do this!)